

**PLASMA IMMERSION ION IMPLANTATION PROCESS USING A
CAPACITIVELY COUPLED PLASMA SOURCE HAVING LOW DISSOCIATION
AND LOW MINIMUM PLASMA VOLTAGE**

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ABSTRACT

A method for implanting ions in a surface layer of a
workpiece includes placing the workpiece on a workpiece
support in a chamber with the surface layer being in facing
10 relationship with a ceiling of the chamber, thereby defining
a processing zone between the workpiece and the ceiling, and
introducing into the chamber a process gas including the
species to be implanted in the surface layer of the
workpiece. The method includes generating from the process
15 gas a plasma by capacitively coupling RF source power across
the workpiece support and the ceiling or the sidewall from
an RF source power generator. The method further includes
applying an RF bias from an RF bias generator to the
workpiece support.

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